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Chapter 8
The Double Move in Meaningful Teaching Revisited

Bert van Oers

Abstract It can be argued that the appropriation of academic concepts provides students with powerful tools for understanding and improving their life conditions. Since the works of Davydov in the 1970s on the formation of scientific concepts in primary school children, studies on meaningful education debated how academically approved subject matter knowledge can be meaningfully integrated into primary school pupils' learning. However, Davydov's solution of going from the abstract to the concrete is disputable. Hedegaard (The qualitative analysis of the development of theoretical knowledge and thinking. Cambridge University Press, Cambridge, pp. 293–325, 1995), Hedegaard (Learning and child development. Aarhus University Press, Aarhus, 2002) adjusted Davydov's approach into a dialectic move from the general to the situation specific. This is now known as the 'double move'. The reconciliation of a pupil's personal notions and motives with academic concepts is, however, still an issue of struggle between researchers, teachers, teacher educators and curriculum developers. Recent re-conceptualisations of the notions of 'the abstract', 'the concrete' and the position of subject matter knowledge yield a revision of the double move. On the basis of our implementation of 'Developmental education' in primary schools, this article promotes the double move as a dialogic movement between meaning positions of novices and experts, prompting the recontextualisation of available knowledge and skills.

Keywords Double move · Abstracting · Germ cell · Generalisation · Dialogue

8.1 Schooling as an Answer to the Variety of Environmental Demands

Human nature is essentially problematic. Human beings are born with limited capacities to fulfil their own (biological) needs and to deal with the demands and threats from the direct environment. Human beings need help to cope with their

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immensely varying environment (physical and cultural), as babies, youngsters and adults. As Bruner (1972) has pointed out, this natural 'immaturity' of humankind has urged the necessity of learning and education in order to adapt to these varying conditions. Through education, human beings are assisted 'to achieve knowledge and skills that are not stored in the gene pool' (Bruner, 1972, p. 29).

Learning from others how to deal with demands from the environment is vital, because of the limited capacity of human beings to deal with too much variety. Our biological system has already built in mechanisms of inhibition that filter out too much stimuli and pay attention to relevant exigencies. This focus is based on the ability to form *joint* attention (with educators and peers), which help us benefit from the support of more experienced others. In its deepest sense, the need for culture springs from this limited cognitive capacity to deal with an overwhelming diversity of stimuli and demands from the environment. Culture is an evolving facility of many generations of human beings to enable themselves to deal effectively with an overload of stimuli and impressions (see van Oers, 2012a).

One of the oldest intellectual inventions of humankind for handling such variety is the formation of categories. Categories are cognitively coded facilities that help us to treat diverse objects *as if* they are basically the same. With the help of such codes (e.g. 'names') we can treat an enormous diversity of objects as if of one type (e.g. 'trees') and distinguish them from other internally diverse categories (e.g. houses). Most of the time there is no need (for survival or efficient communication) to take all details into account, which considerably decreases the cognitive demand on the human system. Over the ages, human beings have spent immense efforts on improving the categories to make them more powerful for the recognition of invisible qualities that can be derived from the systematised knowledge connected with the categories' name. This 'going beyond the information given' (see Bruner, 1973) is only possible when categories are transformed into concepts. Concepts are universally acknowledged as powerful means for dealing with reality and predicting its (perceptually hidden) characteristics.

It was Vygotskij's great contribution to explain the power of categories and concepts by interpreting them as *tools for actions* in the humans' cultural worlds. In his terminology he dubbed the categories as spontaneous, everyday concepts that emerge through direct interactions with, and evaluation of, empirical situations; while the conscious, systematised and generalising categories are called 'academic concepts', which can only be acquired through teaching (see Vygotsky, 1987a). The inherent systematisation of academic concepts is often based on relationships with other concepts.

With his famous experiment on concept formation (using the so-called 'vygotskij-blocks') Vygotsky (1987a) demonstrated that the role of language is essential for structuring categories and making them into real concepts. Vygotskij was, moreover, unambiguous about the relationships of the two types of concepts. Academic concepts get their (initial) meaning and substance from everyday categorisations, while the spontaneous everyday categories are structured with the help of academic concepts, offered by more knowledgeable others. Vygotskij, however,

also warned against too easily concluding that the meaning of our words were actually academic concepts. In *Thinking and speech* (ch. five) he writes:

> From the perspective of dialectical logic the concepts that we find in our living speech are not concepts in the true sense of the word. They are actually general representations [*i.e. categories, BvO*] of things. There is no doubt, however, that these representations are a transitional stage between complexes or pseudoconcepts and true concepts. (Vygotsky, 1987a, p 155).

Due to their internal structure, academic concepts are a powerful means for upgrading word meanings, and uncovering information about the things the concepts can be associated with. By recognising a whale as a mammal, for instance, it is also possible to 'know' that these animals, though living in the sea, will give birth to their offspring as living creatures, even if we cannot perceive this from the outside. And from the moment people conceptualised the world as a spherical body, they could infer that we can never fall off the edge of the world, as many of Xenophon's soldiers feared in about 400 years AC.

No wonder human beings spend so much effort on shaping and upgrading their everyday categories (word meanings) into valid, reliable and powerful concepts. People specialising in concept development were gradually seen as a special group in the course of human history, and long since labelled as philosophers or scientists. The concepts that they produce can be named as scientific concepts. Given the power of these concepts, it is even more understandable that educators also want to help their students with upgrading their empirical concepts and everyday word meanings into scientific concepts, and thus (possibly) improving their participation in diverse cultural practices.

Hence, scientific concepts essentially require teaching. Vygotskij, however, was not very explicit in his view on teaching scientific concepts (even though he was a teacher himself in his 20s!). It is obvious, however, that he found the appropriation of conceptual and abstract thinking a major task of teaching. According to Wertsch (1996), this may be due to the fact that he seemed to adhere to Enlightenment Tenets, suggesting that the use of scientific concepts may lead to an abstract rationality that leads to uniform intellectual functioning and true understanding of the world. Scientific concepts could be seen as the 'telos' of human thinking. Wertsch argues, however, that Vygotskij was at least ambiguous about his view of the future of human thinking. There are reasons to believe that Vygotskij was also aware of the untenability of this position. Anyway, it is true, as Wertsch points out (p. 40), that Vygotskij never clearly explained how scientific concepts could be linked to inner speech and the promotion of conceptual thinking in pupils. In conclusion, we may say that Vygotskij did not explain in detail how scientific concepts should be taught. This aspect of his theory was mainly elaborated by his students, particularly Davydov and El'konin, who, in their collaborative work, refined this part of the theory from the 1960s onwards.

8.2 Davydov's Approach to Theoretical Thinking and Its Critiques

Davydov agreed with Vygotskij on the importance of theoretical concepts for the cultural-historical formation of humankind, and also adhered to the Enlightenment project that aims at universal knowledge of reality. Davydov, however, criticised Vygotskij for neglecting the importance of subject matter in a theory of teaching theoretical concepts. Theoretical concepts represent the highest level of thinking at a certain stage of history, according to Davydov. Therefore, theoretical concepts are vital for linking students' perceptually driven understandings to the deep understandings produced by science, and thus learners' development of thinking benefits from cultural history.

Davydov published his seminal work on concept formation in 1972 in a book called (translated) 'Types of generalisation in teaching' in which he discussed his research undertaken with colleagues (e.g. Ajdarova, El'konin and others) on the development of a generalised theory of concept formation. Following Vygotskij and strongly influenced by Il'enkov (1960, 1964), Davydov maintained that teaching students to think is the main purpose of education and the best way to harmonise the development of pupils' thinking with the cultural-historical development of human thought. Hence, it was necessary to provide pupils with the *outcomes* of modern scientific-technological work (Davydov, 1967; 1972, p. 369–376). More particularly, this meant that students should be assisted to learn how to go beyond their primitive understandings of the world in terms of superficial, perceptual categories (empirical concepts) and rather learn to approach reality on the basis of 'substantial, really human reflective, dialectical thinking' (Davydov, 1972, p. 285), based on deep understanding of the basic and universal relationships that underlie human praxis. Consequently, they could conceive of the world as a process of *development of objects* rooted in a universal image of its concrete nature. (p. 287).

Davydov (1972, pp. 368–373) maintained that this educational purpose can be achieved by teaching the students the academic concepts in a way that makes sense to them and is based on pupils' concrete actions with the help of theoretical models that are provided to them by the teacher as tools for action. The core of this teaching-learning process ('obučenie') exists in the *exposition* (izloženie) of the subject matter in a genetic system that can describe the subject matter as a movement from an abstract fundamental, universal core concept (i.e. the germ cell, *kletočka*) to a system of derived (more specified) sub-concepts. Hence, for example, mathematical subject matter could in Davydov's point of view, be interpreted as a conceptual system derived from basic mathematical 'mother structures' to more

specific theoretical concepts.[1] This process is called ascending from the abstract to the concrete, and it is used as a model for thinking about subject matter and learning. Actually, in matters of teaching and scientific research, the whole process also includes the reverse: exploring the concrete (in its multifaceted complexity) and constructing a universal abstract. True knowledge must always be grounded in empirical facts (Davydov, 1972, p, 305; see also Falmange, 1995, pp. 205–228 for an elaborate analysis of the abstract and the concrete in dialectic logic).

Over the years, Davydov's approach has encountered many critical analyses, especially as a theory of teaching. First of all the notion of the abstract as the unit which interrelates the general and specific qualities of concrete reality, and which should be conceived of as an ideal, universal and true representation of a cultural or physical object. It is evident that Davydov comes close to an essentialist concept of knowledge, even though one of his main philosophical sources (e.g. Il'enkov, 1960) was very sceptical about the possibility of such universals. Leaving aside the epistemological discussions of this view, we have to discuss his use of this idea of 'abstract' in his theory of teaching. As we saw above, Davydov conceived of teaching theoretical concepts as a process of ascending from an abstract to concrete specifications or derivations of this abstract. In subject matter issues, he propagated the starting point of the development of theoretical thinking as a process starting from a germ cell which he interpreted as a general, primary abstraction which could produce all concrete specifications of a whole domain. It was the cultural function of science to explore concrete reality and find out the primary abstractions for the true explanation of this part of reality. Hence, teaching theoretical thinking must start out from this germ cell (general abstraction) and progress along the lines of specific concepts that emerge from further (conceptual and empirical) analyses of the germ cell.

Davydov and his colleagues have demonstrated the power of this approach in primary school in different subject matter domains (especially mathematics and language education, summarised in Davydov, 1972, 1996). All examples of these successful programs, however, show that the students can (creatively) use the theoretical concepts, but no examples can be found where they were themselves theorising concrete reality. *The students acquired a system of theoretical concepts, indeed, but did not learn to theorise!* In all cases, the primary abstraction was offered by the teacher, handed out, indeed, in ways that could be adopted by the (young) pupils for solving more or less isolated (though comprehensible) problems, such as measuring the classroom. In line with this criticism, experts on didactics of subject matter domains are very reluctant to state whether a whole disciplinary domain (like mathematics, biology, linguistics, etc.) can ever be reduced to one core

[1]Davydov followed the ideas of a French collective of mathematicians, working under the name of Bourbaki, who were trying to reduce the whole of mathematics to a limited number of so-called 'mother structures': algebraic structures, ordering structures and topological structures (see Davydov, 1972, p. 262). This shows Davydov's inclination towards structuralism and a universal abstract rationalism that we hinted on previously in Vygotskij's work.

basic concept (substantial abstraction or germ cell). The Dutch mathematician and didactician of mathematics education, Freudenthal, once summarised his critique of Davydov by saying that instead of the acquisition of (universal) mathematical structures, pupils should appropriate abilities in structur*ing* problems with the help of mathematical tools (Freudenthal, 1979).

Epistemologically, it is questionable whether something like a universal germ cell can be constructed, and is productive for teaching pupils subject matter concepts, without getting themselves involved in activities of theoretical thinking. Due to Davydov's heavy reliance on the germ cell for organising and teaching theoretical concepts, he deprived the pupils of necessary experiences to appropriate theoretical thinking. In matters of curriculum development and teaching/learning, Davydov strictly adhered to the idea that pupils should not repeat scientists' methods of investigating reality in order to discover the historically produced concepts for themselves (see Davydov, 1967, p. 267–268). He was right, but his conclusion that teaching always should be based on *exposition of main concepts* is illogical, and actually precludes the possibility of meaningful inquiry-based learning and cooperative learning in the classroom. As I shall demonstrate later, it is possible to get children engaged in a scientist's role and still let them benefit from valued scientific concepts (see also Carpay & van Oers, 1993, 1999)[2]. I will return to this issue later.

In terms of teaching, Davydov's approach definitely needed further elaboration. It was one of Mariane Hedegaard's great contributions to educational science, with regard to teaching theoretical thinking, to develop Davydov's work and implement her improved version in classroom practices.

8.3 The Double Move in Teaching for Meaningful Learning of Theoretical Concepts

Hedegaard has conducted a lot of research on the implementation of teaching theoretical concepts in the classroom on the basis of a modified Davydov approach. She described this research in many publications, but I will base my discussion mainly on her 2002 book. In this book, her primary mission is to contribute to the improvement of school teaching that 'should provide children with the motive and method for thinking theoretically in concrete situations as well as contribute to their personality development' (Hedegaard, 2002, p. 69). In her early works, she used the notion of 'double move' for the explanation of the development of theoretical thinking in

[2]In his later work, (Davydov, 1996) reacted to our 1993 article. It is interesting to note that he became more open to inquisitive work of pupils (as we argued). It is typical of his position in 1986 that he only picked up our argument for polylogue (i.e. the use of expert texts), which again can be used of an exposition of state-of-the-art scientific concepts. See, for example, Davydov, 1983. Although true, this was not our argument for the use of polylogue (elaborated later in this chapter). See Davydov (1986, p. 225–226).

subject matter domains. I will focus my present analyses on this concept, which is nowadays still quoted (Hedegaard & Fleer, 2013). In her later work, Hedegaard shifts her attention to the 'acquisition of conceptual systems that relate to the social, societal and political aspects of life' (Hedegaard, 2008, p. 309). In this multilevel system, the double move is still present, and explained as an outcome of the students' participation in an institutional tradition of practice. The explanation of the developmental process of students in subject matter domains is furthermore enriched by showing how it is related to motive development (rather than concept formation alone). The question still remains how to conceive of this double move. This latter motive development, however, cannot be addressed here within the limits of this chapter.

A core concept in Hedegaard's work is Davydov's notion of 'ascending from the abstract to the concrete'. As a consequence, she also uses the notion of 'germ cell' as a general starting point for teaching theoretical concepts and theoretical knowing. In her interpretation of the 'germ cell', she discards the universalistic (essentialistic) connotations found in Davydov's theory. Most of the time this germ cell now takes the form of a general, generative model to use as a tool for problem-solving for specific types of problems without attributing universal truth to them. Nevertheless, she writes:

> A germ cell is differentiated and elaborated from a set of conceptual relations that characterise a subject domain (Hedegaard, 2002, p. 31).

Evidently, she assumes that such conceptual constructions can be found for all subject matter areas, and that these will be helpful for promoting theoretical thinking in pupils. In this matter, she takes a more liberal position than Davydov by not claiming that the germ cell can determine the evolution and theoretical interpretation of a whole discipline. Hedegaard's theorising is actually more modest, and offers powerful tools for the solution of specific types of problems.

Hedegaard also enriched the original approach of Davydov, by allowing pupils to engage in genuine classroom inquiries and cooperation on the basis of problems that make sense from pupils' everyday life (Hedegaard, 2002, p. 21).

The previously described movement from the abstract to the concrete and *vice versa* was named the *double move* by Marianne Hedegaard. It became a cornerstone in her research into teaching in different subject matter domains (see among others Hedegaard, 1995, 1999, 2002); but she also elaborated this idea beyond Davydov's descriptions. She acknowledges (Hedegaard 2002, p. 42) that her approach is heavily influenced by Davydov's notions of 'developmental teaching' and 'ascending from the abstract to the concrete', but she continues that she

> transcends the idea of 'ascending from the abstract to the concrete' and instead builds more directly on Vygotsky's concept of the zone of proximal development, transformed into a conceptualisation of teaching and learning as a double move between situated activity and subject matter concepts (p. 42–43).

As alternative formulations of this double move, we also find definitions in her work that avoid the notion of 'the abstract' and refer to 'the dialectic interaction between the collective cultural activity and the ideographic personal activity as the

basis for development and concept formation' (Hedegaard, 1999, p. 22; 2002, p. 21). In classroom practices, the double move amounts to mutual interactions between the general (as embodied in theoretical concepts of a subject matter area) and the particular (as embodied in pupils' situated knowledge and images).

In her elaborations of this notion of developmental teaching, Hedegaard starts out from a strong Vygotskian principle that the learning of subject matter should extend a child's everyday meanings, and enable a child to use this knowledge for the conduct of everyday activities. Subject matter learning can only be successful if it builds on a child's everyday knowledge (Hedegaard, 1999, p. 23; Hedegaard, Chaiklin, and Pedraza, 2001, p. 122). In this view, Hedegaard also endorses the Vygotskian principles that learning implies a transition from interpersonal notions to individual knowledge, and that the essence of cultural learning is rooted in the help that children get in their accomplishment of activities that they cannot yet carry out without help from adults or more knowledgeable peers. It is in this zone of proximal development that theoretical concepts (theoretical models) can be handed out to pupils for the development of their conceptual thinking (use of scientific concepts). Through this dialectical move in a zone of proximal development, children's everyday concepts can be meaningfully integrated with subject matter concepts (Hedegaard 2002, p. 78–79). It is the role of the teacher to guarantee that a useful and general theoretical model is presented in children's problem-solving activity.

Hedegaard has elaborated her teaching theory of double move by describing six steps for the implementation in classroom practice within different subject areas (see, for example, 2002, Chaps. 6, 8 and 11 focusing mainly on the domain of history teaching). From these descriptions, it is evident that problem formulations and the (re)formulation of the germ-cell/core models are pivotal.

The teacher gives assignments to the children, which engage them in collaborative problem-solving and building a model that may help them better understand the topic of the assignment, and that represents an issue from the domain of history teaching (and its objectives). Close reading of the text and inspection of the wonderful examples of children's work, a number of issues remain unclear in the approach, mostly because the work is presented as research where teachers, researchers and experts in discipline content conceptualised the teaching together (e.g. how teachers are trained to implement this model).

As with Davydov's work, Hedegaard seems to be successful in helping children to acquire theoretical (model-based) concepts, but it remains unclear to what extent the children are really introduced into theoretical thinking proper (including hypothesising, data collection and analysis, reporting). I suppose that a deeper analysis of her grounding concepts (like abstraction, zone of proximal development, play) may provide a new interpretation of the double move, and transform it into a teaching strategy that comes closer to the children's personal action, and makes the double move a teaching strategy that is not only culturally meaningful but also makes personal sense to the pupils with respect to their classroom inquiries. Let me first start with some brief critical reflections on the grounding concepts.

8.3.1 Critical Comments on Some Grounding Concepts

THE ABSTRACT. Although Hedegaard gradually changed her descriptions of the ascendance from the abstract to the concrete into formulations focussing on the interaction between the general (scientific concepts) and the specific (children's background knowledge), there is still some notion of the abstract involved by her use of the notion of 'germ cell'. By so doing, Hedegaard remains close to Davydov's understanding of the abstract (theoretical concepts) in her earlier work, and gives no explanation of the psychological process of *abstracting*. In this view, 'the abstract' is basically an epistemic category that guides the teachers' interactions with the students in their processes of model formation, and not a psychologically interpreted result of the pupil's process of focusing from a particular point of view, highlighting specific aspects, while neglecting others (i.e. abstracting). This criticism can also be levelled at Davydov and Il'enkov. As a result, this approach sustains a view of the development of conceptual thinking that takes *curricular content matter* as a starting point. By teaching, this content should then be made meaningful for the pupils, by connecting it to their available (concrete) knowledge (see also Engeström, 2009, p. 327 for a similar critique of Davydov's view).

A more psychologically relevant conception of 'abstracting' can be found in the works of the German philosopher Ernst Cassirer who defined abstracting as an act of taking and maintaining a specific *point of view* on a particular object. Looking consistently at the world, for example, from the point of view of 'redness' yields a mental image of red things, neglecting all other colours (try it when looking at your bookshelf!). Looking at the world from the point of view of 'things with three corners' yields a mental image of triangles which includes many different specific forms (see van Oers, 2001; 2012b). Hence, abstracting is a psychological activity of taking a specific point of view and consistently sticking to it in the analysis of and communication about the environment. When confronted with a problem in everyday life (including classrooms) for which the pupil does not possess a ready solution, a first step can be to abstract the problem from one perspective and look for solutions that may turn out helpful. However, any solution (tool) offered by a teacher for such abstracted problem is by itself also problematic, as the pupil has to see the meaning of this tool for him/herself, and figure out how to use it, and predict what may be the result of this use. We see here the process of double stimulation as it was once described by Vygotskij (Vygotsky, 1978). Adopting this Cassirerian concept of abstraction precludes any form of essentialism, while providing a useful starting point for a concrete psychological description of the double move. From this latter point of view, the double move refers to permanent interactions among different points of view.

Generalisation. The notion of the general and generalisation can be criticised in a way similar to the critique of the notion of abstraction. It is an epistemic category, and lacks a psychological description of what is going on when people are generalising their (theoretical) models. Generalised models are supposed to be applicable to more situations or objects than the ones originally involved in the

construction of the concept (model). As such, it is close to the quality of transfer. However, transfer is generally seen as a qualification of the *outcomes* of some learning; it does not describe or clarify the process of transferring knowledge itself. In my analyses of transfer from an activity theory point of view, I have argued that transferring is actually a process of transforming available knowledge, models or skills to make it fit in new situations, or *recontextualisation* (see van Oers, 1998, 2001). As we could demonstrate in empirical research in biology education in secondary education, transfer of understanding energy in muscle cells (cellular respiration), can be promoted in students when they learn to transform their knowledge in their interactions with new situations (like energy production in yeast, muscles of sprinters or muscles of endurance sportsmen or—women (Wierdsma, 2012; see also van Weelie, 2014). The ability to transform once appropriated knowledge into new forms that fit in new situations is the psychological foundation of knowledge that we call 'generalisations'. The benefit of this psychological reconceptualisation of generalisation is that it can now be encouraged in pupils by helping them reflect on varying applications of models and knowledge structure and examining how they should be transformed in order to make them fit in these new situations. We found in our research that this is a powerful strategy in the development of conceptual thinking of students.

Zone of Proximal Development. As we have seen, Hedegaard relates the double movement to the zone of proximal development. However, her interpretation of this ZPD remains very close to the description given in Mind in Society (Vygotsky, 1978, p. 86), referring to the distance between the pupil's actual level of development and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers. By itself there is nothing wrong with this description, be it that any kind of instruction can be qualified like this (problem-solving under adult guidance). This is evidently not what Vygotskij (nor Hedegaard) have in mind. This frequently quoted 'definition' misses any reference to the psychological quality Leont'ev called *sense* (the valuation of actions and tools from the perspective of personal motives). This conception of the ZPD overlooks Vygotskij's emphasis on the fact that the core element of the ZPD is '*imitation*'. This is not to be conceived of as copying isolated actions (Vygotsky, 1987b, vol. 5, Chap. 6)! The zone of proximal development is located (and retrieves its meaning and sense) within an imitated cultural practice. This view on the zone of proximal development could be easily integrated in Hedegaard's double move approach, but it is not in her earlier work. She brings this concept into her later writing on the play, learning and development of children in families and school (see Hedegaard and Fleer, 2013). The double move in the process of formation of theoretical concepts then can be conceived as imitative participation and social interaction in the context of an emulated academic practice (including empirical research and conceptual analysis), and accomplishing moves among different meaning positions (perspectives).

Transition From Play to Learning Activity. The notion of play in Hedegaard's analysis is conceived as a child's activity that transforms into learning activity at a certain moment in development (Hedegaard, 2002, p. 70). Here, she follows the

theory of El'konin and Davydov, and elaborates the idea of developing motives (e.g. meaning giving motives, dominant motives) through participation in new institutional practices which gives possibilities for a child's development. This conception of play is problematic for different reasons. It does not convincingly explain what happens to play after the transition to learning activity and its dominant motive. Moreover, it cannot give an explanation of the relationship between learning and play.

Analyses of play from an Activity Theory point of view offer a view of play as a way cultural activities may be carried out. If a child is allowed to get voluntarily engaged in activities, and is ready to imitate this activity in his/her own way, follows some of the rules of that activity, and is allowed to get some degrees of freedom to change the goals, actions, tools, rules, then we call this activity play. As 'learning' is an inherent function of all cultural activities, it is also a potential element in play activities. Moreover, there is no reason to be reluctant about the inclusion of adults (van Oers, 2013). Even more importantly for the present argument, all cultural activities can adopt a playful way of executing (if allowed by the environment). Hence, learning (as institutionalised in science) can also take a playful form. So in this view, there is no transition from play to learning activity, but an innovation of play activities through engagement in new cultural practices (or activities). The new dominant motive only opens possibilities to get children engaged in a new type of practice, in which conceptual and special strategic rules dominate. It does not prescribe by itself the mode in which this activity is to be carried out. This new conception of play opens new possibilities for the organisation of the collaborative activity of building theoretical concepts. In my view, it originates in the imitation of academic practices, pursuing personal questions, including posing hypotheses, decisions of how to collect data, discourse on different interpretations and reporting the outcomes. Sure, students cannot perform all these element from the beginning (as peripheral participants), but they will get help from more knowledgeable others in order to explore the proposed solutions (models) and explanations from different angles (see van Oers, 2012b).

8.4 Getting Engaged in Academic Practices: The Development of Historical Thinking

In the Netherlands, we have been working on the implementation of Developmental Education in primary schools since 1980s. In the beginning, we also tried to implement a Davydovian approach in this curriculum. In those days, we struggled with how to fruitfully communicate the basic epistemic concepts (abstract, concrete, general, particular) to teachers and teacher trainers as tools for them to organise their everyday classroom practices, and to maintain the ambition to establish *meaningful* education for both students and teachers. By transforming the fundamental, epistemic concepts into psychological theoretical concepts (according to

CHAT), it turned out easier and more productive to work with practitioners for the collaborative implementation of a play-based curriculum in the primary school (4–12 years old) in all subject matter domains. Like Davydov and Hedegaard, we aimed at introducing primary school children to the highest possible levels of cultural development, that is, to say into forms of theoretical thinking in different subject matter domains. Therefore, we revisited the idea of ascending from the abstract to the concrete, or shifting from the general to the particular, as starting points for everyday classroom practices.

One of the projects we have been working on in the past decade was the implementation of an innovated way of history teaching in primary school. The main purpose was to develop historical thinking in pupils (higher grades of primary school), rather than pursuing the acquisition of historical knowledge about events, persons and periods (as is usual in traditional approaches to history teaching). The following guiding concepts were constitutive for this project:

(1) PlayfulLearning: The practice of historians was emulated as playfully conducted activities of researching shared questions, the pupils played the role of historians, following their methodical rules (like searching for and investigating of historical sources, such as archives, pictures, experiences, etc.). They were free to organise and interpret their sources and methods according to their own understandings. Important in this imitation of the historians' practices was the permanent critical discourse on the (shared) questions, methods, interpretations, conclusions among pupils and experts (teacher or other external specialists in their area of research). A truthful imitation of cultural practices always respects the intergenerational character of such practices. As explained above, care must be taken that the experts are not pushed into a teaching role, but always act as co-researchers possessing specific information (respecting the characteristics of play). For a meaningful continuation of the pupils' play, it is important that all moves (at the levels of actions or conceptualisation) are meaningfully contextualised in the children's activities, and at the same time are consistent with the cultural heritage. Fleer (2010, p. 15) quite rightfully argues that this is a conceptual and contextual intersubjectivity, necessary for a meaningful double move for (young) pupils.

(2) Personal Questions as Point of View: The pupils personal questions originating from their everyday life (such as names of street in their environment, the emancipation of women, the history of Zoos) were always their starting points when they researched historical objects. This starting point had two positive consequences: it guaranteed the high involvement of the pupils (as was required for the play-based format of their activities), and it created the proper starting point for abstracting, i.e. strictly focusing on relevant information and neglecting information that could not contribute to the development of their understandings in their view.

(3) Use of Ad Hoc Co-constructed Models: During their researches, the pupils also were looking for appropriate schematisations (models) to represent their findings. One of the major models which represented their findings in causal sequences between events in the past, present and future was the time line that they reconstructed together and discussed with peers and more knowledgeable others.

(4) Engagement in Polylogue: It is important that the progress of the pupils' research is not only guided by their peers, but also by experts (e.g. the teacher). Additionally, when searching for answers to their personal questions, the pupils also start looking for sources that are available outside the classroom, like relevant (history) books, Internet, films, interviewees, etc. The pupils' research should not only be based on within group dialogues, but also must include polylogues, which means dialogues with many ('poly') other, external sources in order to critically evaluate their own solutions with the help of established, historically produced findings of scholars. As a consequence, the findings of the pupils also must be made public by reporting (i.e. building their own archive that can be consulted by others). Through practicing polylogues, meaningfully linked to their personal queries, pupils also appropriate a professional stratification of their personal language (Bakhtin, 1981, p. 289). The critical use of external sources and existing authoritative texts is a basic element in the imitation of historians by the pupils. Teachers' guiding questions, as participants in the research process, are also essential here.

(5) Promoting Personally Persuasive Discourses: Through experiencing many external discourses, pupils learn to shift from their personal points of view to those of others (peers and experts). It is important that children also investigate the conceptual changes this may require (for example, by asking questions like: 'Are we sure?'), and get used to reformulating (reconstructing their own knowledge and understandings in other forms), to become able to recontextualise their situated knowledge (important for generalisation). By being encouraged to reflect on their own and others' thinking and utterances, and telling in their own words what was achieved collectively, it may be expected that pupils also learn to avoid just repeating authoritative language and develop in due time a habit for internal dialogue before contributing to external discourses (called internally persuasive discourse by Bachtin, 1981, p. 342–343). We have not yet been able to investigate this issue more closely in our history project, but the teaching strategies implemented in the classrooms with the help of the 'Toolkit' (recently developed and investigated) include advice and examples for teachers, so we may expect such internally persuasive discourse to emerge in due time.

8.5 A Short Conclusion: What About the Double Move?

In this chapter, I have engaged with the central ideas in Hedegaard's conception of a double move, and in so doing have elaborated and transformed the text that describes her approach into *psychological* language. Through linking the central ideas in the double move approach to historically evolving concepts as well as to contemporary pedagogical approaches, the importance of her work becomes more easily recognisable to teachers in their classrooms and to teacher educators. In short, I argued for a conclusion that frames the double move as a process of moving

among different meaning positions that rouse the needs for recontextualisation of personal knowledge, and bringing this in harmony with expert formulations (including the standard academic formulations of concepts).

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